

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

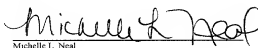
Group  
Art Unit: Unknown  
Attorney  
Docket No.: SHC0127  
Applicant: Hideyuki Ishikawa  
Invention: DISPOSABLE DIAPER AND PROCESS  
FOR MAKING THE SAME  
Serial No: Unknown  
Filed: Herewith  
Examiner: Unknown

Certificate Under 37 C.F.R. 1.10

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on MAY 24, 2001

  
Michelle L. Neal

PRELIMINARY AMENDMENT

Box Patent Application  
Assistant Commissioner for Patents  
Washington, DC 20231

Sir:

Prior to the examination of the above-identified application, please amend the application  
as follows:

IN THE SPECIFICATION

Please replace the first full paragraph on page 2 with the following:

- It is an object of this invention to provided a disposable diaper designed so that the  
wearer's crotch and waist regions can be covered by an elastically stretchable covering member  
without deteriorating a desired effect of preventing excretion leakage from occurring around  
wearer's legs. - -

Please replace the third paragraph beginning on page 2 and continuing on page 3 with the  
following:

- -According to this invention the covering member consists of an elastically stretchable

first layer and an inelastically stretchable second layer formed with a plurality of continuous fibers and the continuous fibers being fixed to the first layer in at least a pair of bonding zones spaced apart from each other so that  $L/D$ , i.e., a ratio of a length  $L$  of the continuous fiber extending between the pair of the bonding zones to a distance  $D$  in straight line between the pair of bonding zones is larger in a desired range of the covering member than in the remaining zone.- -

Please replace the first full paragraph on page 3 with the following:

- -Another aspect of this invention concerns a process for making a disposable diaper comprising an elastically stretchable covering member adapted to cover diaper wearer's crotch and waist regions and a liquid-absorbent core member sandwiched between a liquid-pervious sheet destined to come in contact with skin of the diaper wearer and the covering member.- -

Please replace the second paragraph beginning on page 3 and continuing on page 4 with the following:

- -According to this invention one process comprises steps of bonding an elastically stretchable first layer destined to form the covering member and a second layer formed with a plurality of inelastically stretchable continuous fibers together in a plurality of intermittently formed bonding zones and thereby to form a composite sheet, stretching only a portion of the composite sheet in one direction so that the first layer forming the portion may be elastically stretched together with the continuous fibers, and then leaving the composite sheet contract under a contractile force of the first layer to form the covering member.- -

### IN THE CLAIMS

Please amend Claim 1 as follows:

1. (Amended) A disposable diaper comprising:

an elastically stretchable covering member for covering a diaper wearer's crotch and waist regions;

a liquid-pervious sheet for contacting with skin of said diaper wearer;

a liquid-absorbent core member sandwiched between said liquid-pervious sheet and said covering member,

said covering member consisting of an elastically stretchable first layer and an inelastically stretchable second layer formed with a plurality of continuous fibers, said continuous fibers being fixed to said elastically stretchable first layer in at least a pair of bonding zones spaced from each other so that a ratio of  $L/D$ , where  $L$  is a length of said continuous fiber extending between said pair of the bonding zones and  $D$  is a distance in straight line between said pair of bonding zones, is larger in a first zone of said covering member than in a remaining zone.

Please amend Claim 2 as follows:

2. (Amended) The diaper according to Claim 1, wherein said first zone comprises a transversely middle zone of said diaper.

Please amend Claim 3 as follows:

3. (Amended) The diaper according to Claim 1, wherein said elastically stretchable first layer comprises at least one of an elastically stretchable film and a nonwoven fabric made of crimped fiber.

Please amend Claim 4 as follows:

4. (Amended) The diaper according to Claim 1, wherein said continuous fibers of said inelastically stretchable second layer are made of at least one of polypropylene and propylene copolymer.

Please amend Claim 5 as follows:

5. (Amended) The diaper according to Claim 1, wherein said elastically stretchable first layer further includes a liquid-impervious sheet and lies inside said second layer.

Please amend Claim 6 as follows:

6. (Amended) The diaper according to Claim 1, wherein said elastically stretchable first layer further comprises a liquid-impervious sheet and lies inside said inelastically stretchable second layer so that said elastically stretchable first layer functions as a liquid-impervious backsheet for said liquid-absorbent core member.

Please amend Claim 7 as follows:

7. (Amended) A process for making a disposable diaper having an elastically stretchable covering member for covering a diaper wearer's crotch and waist regions, a liquid-pervious sheet for contacting with skin of said diaper wearer, and a liquid-absorbent core member sandwiched between said liquid-pervious sheet and said covering member, said process comprising the steps of:

providing an elastically stretchable first layer destined to form said covering member;

providing a second layer formed with a plurality of inelastically stretchable continuous fibers;

bonding said elastically stretchable first layer and said second layer together at a plurality of intermittently formed bonding zones to thereby form a composite sheet;

stretching only a portion of said composite sheet in one direction so that said elastically stretchable first layer of said portion may be elastically stretched together with said continuous fibers; and

allowing said composite sheet contract under a contractile force of said first elastically stretchable layer to form said covering member.

#### IN THE ABSTRACT

Please amend the abstract as follows:

- -A disposable diaper that has a covering member adapted to cover a wearer's crotch and waist regions. The covering member includes an elastically stretchable first layer and an inelastically stretchable second layer formed with a plurality of continuous fibers. The continuous fibers are fixed to the first layer in at least two bonding zones. The covering member presents a particularly large value of  $L/D$ , a ratio of a length  $L$  of each continuous fiber and a distance  $D$  in straight line between each pair of the adjacent bonding zones.- -

• • • R E M A R K S • • •

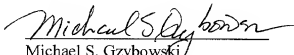
By the present Preliminary Amendment, the specification, claims and abstract have been revised to more clearly describe applicant's invention in accordance with the requirements of 35 U.S.C. § 112.

Care has been taken so as to avoid the addition of new matter in the specification, claims and abstract.

Entry of the present Preliminary Amendment prior to the examination of the application is respectfully requested.

In the event applicant has overlooked the need for an extension of time, an additional extension of time, payment of fee, or additional payment of fee, applicant hereby petitions therefor and authorizes that any charges be made to Deposit Account No. 02-0385, Baker & Daniels.

Respectfully submitted,

  
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VERSION WITH MARKINGS TO SHOW CHANGES MADE

Changes Made to Specification Paragraphs

The first full paragraph on page 2 has been amended as follows:

- -It is an object of this invention to [improve the conventional] provided a disposable diaper designed [such as the above-mentioned diaper of prior art] so that the wearer's crotch and waist regions can be covered by an elastically stretchable covering member without deteriorating a desired effect of preventing excretion leakage from occurring around wearer's legs.- -

The third paragraph beginning on page 2 and continuing on page 3 has been amended as follows:

- -[The improvement according] According to this invention [is in that] the covering member consists of an elastically stretchable first layer and an inelastically stretchable second layer formed with a plurality of continuous fibers and the continuous fibers being fixed to the first layer in at least a pair of bonding zones spaced apart from each other so that  $L/D$ , i.e., a ratio of a length  $L$  of the continuous fiber extending between the pair of the bonding zones to a distance  $D$  in straight line between the pair of bonding zones is larger in a desired range of the covering member than in the remaining zone.- -

The first full paragraph on page 3 has been amended as follows:

--[According to another aspect of this invention, by an improvement in the] Another aspect

of this invention concerns a process for making a disposable diaper comprising an elastically stretchable covering member adapted to cover diaper wearer's crotch and waist regions and a liquid-absorbent core member sandwiched between a liquid-pervious sheet destined to come in contact with skin of the diaper wearer and the covering member.- -

The second paragraph beginning on page 3 and continuing on page 4 has been amended as follows:

- -[The improvement according] According to this invention one process comprises steps of bonding an elastically stretchable first layer destined to form the covering member and a second layer formed with a plurality of inelastically stretchable continuous fibers together in a plurality of intermittently formed bonding zones and thereby to form a composite sheet, stretching only a portion of the composite sheet in one direction so that the first layer forming the portion may be elastically stretched together with the continuous fibers, and then leaving the composite sheet contract under a contractile force of the first layer to form the covering member.- -



Changes Made to Claims

Claim 1 has been amended as follows:

1. (Amended) A disposable diaper comprising:

an elastically stretchable covering member [adapted to cover] for covering a diaper wearer's crotch and waist regions; [and a liquid-absorbent core member sandwiched between]

a liquid-pervious sheet [destined to come in contact] for contacting with skin of said diaper wearer; [and]

a liquid-absorbent core member sandwiched between said liquid-pervious sheet and said covering member, [wherein:]

said covering member [consists] consisting of an elastically stretchable first layer and an inelastically stretchable second layer formed with a plurality of continuous fibers, [and] said continuous fibers being fixed to said elastically stretchable first layer in at least a pair of bonding zones spaced from each other so that a ratio of  $L/D$ , [i.e., a ratio of a] where L is a length [L] of said continuous fiber extending between said pair of the bonding zones [to] and D is a distance [D] in straight line between said pair of bonding zones, is larger in a [desired range] first zone of said covering member than in [the] a remaining zone.

Claim 2 has been amended as follows:

2. (Amended) The diaper according to Claim 1, wherein said [desired range] first zone comprises [is defined in] a transversely middle zone of said diaper.

Claim 3 has been amended as follows:

3. (Amended) The diaper according to Claim 1, wherein said elastically stretchable first layer [is formed with] comprises at least one of an elastically stretchable film [or] and a nonwoven fabric made of crimped fiber.

Claim 4 has been amended as follows:

4. (Amended) The diaper according to Claim 1, wherein said continuous fibers of said inelastically stretchable second layer are made of at least one of polypropylene [or] and propylene copolymer.

Claim 5 has been amended as follows:

5. (Amended) The diaper according to Claim 1, wherein said elastically stretchable first layer further includes [is formed with] a liquid-impervius sheet and lies inside said second layer.

Claim 6 has been amended as follows:

6. (Amended) The diaper according to Claim 1, wherein said elastically stretchable first layer further comprises [is formed with] a liquid-impervius sheet and lies inside said inelastically stretchable second layer so that said elastically stretchable first layer [may be used] functions as a liquid-impervius backsheet for said liquid-absorbent core member.

Claim 7 has been amended as follows:

7. (Amended) A process for making a disposable diaper [comprising] having an elastically stretchable covering member [adapted to cover] for covering a diaper wearer's crotch and waist regions, a liquid-pervious sheet for contacting with skin of said diaper wearer, and a liquid-absorbent core member sandwiched between [a] said liquid-pervious sheet [destined to come in contact with skin of said diaper wearer] and said covering member, said process comprising the steps of:

[bonding] providing an elastically stretchable first layer destined to form said covering member; [and]

providing a second layer formed with a plurality of inelastically stretchable continuous fibers;

bonding said elastically stretchable first layer and said second layer together [in] at a plurality of intermittently formed bonding zones to [and] thereby [to] form a composite [sheet,] sheet;

stretching only a portion of said composite sheet in one direction so that said elastically stretchable first layer [forming] of said portion may be elastically stretched together with said continuous [fibers,] fibers; and

[then leaving] allowing said composite sheet contract under a contractile force of said first elastically stretchable layer to form said covering member.

Changes Made to Abstract

A disposable diaper that has a covering member adapted to cover a wearer's crotch and waist regions. The covering member includes an elastically stretchable first layer and an inelastically stretchable second layer formed with a plurality of continuous fibers. The continuous fibers are fixed to the first layer in at least two bonding zones. The covering member presents a particularly large value of  $L/D$ , a ratio of a length  $L$  of each continuous fiber and a distance  $D$  in straight line between each pair of the adjacent bonding zones.